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MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

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EDITORIAL.

NOTHING has occurred of late which has so greatly concerned the manufacturing interests of the country as the decision of Mr. Justice Miller of the Supreme Court, in the suits brought by several dealers in champagne wines against two lithographers in this city. The Court decided that a trade-mark is not an invention, or a discovery within the scope of the Patent Laws, and that it is not a writing or a product of authorship within the province of copyright legislation. It is, therefore, not within the meaning of the clause of the Constitution which empowers Congress to legislate for the protection of inventors and authors. While Congress can pass laws to regulate commerce between States, it is not competent to do so in transactions within the States, and this is the most complicated feature of the situation. As upwards of 8,000 trade-marks have already been registered, the importance of this decision is evident. It is, however, established that, while the special law is inoperative, the common law still holds good, and aggrieved persons can still protect themselves by a resort to it. Since this decision has been made, the subject has been under discussion in the Presidential Cabinet, and the Secretary of the Interior has issued a circular notifying persons interested that the Patent-office will still continue to register trade-marks for such as may desire to do so, as an evidence of priority.

A number of firms in New York City, using trade-marks, held a meeting recently, at which it was stated by the Chairman, Mr. Orestes Cleveland, of the Dixon Crucible Co., that the fact that the common law afforded ample protection should be made generally known, as many imitators had already begun their work, with the idea that they now could use any device or label. Under the act just declared unconstitutional, a manufacturer was enabled to register a trade-mark which he proposed to use, before actually employing it, and be protected, while the common law will only protect after actual use.

WE have not seen anything in our foreign exchanges of late quite so absurdly funny as the following grave remarks in the *Pharmaceutical Journal and Transactions:*

"The power of ridicule is acknowledged, and there is no doubt it may be utilized in making impressions upon the memory. In connection with the New York College of Pharmacy, there is a conversational class, in which 'quiz' is a recognized institution. Banter appears, in fact, to have been so useful in correcting errors in past sessions that the Board of Trustees have, at the commencement of the present one, formally appointed two gentlemen to the office of 'quiz masters.'"

This is almost as bad as the editorial in the *Medical Press and Circular* upon the status of the medical schools in the *State of Louisville;* and the surprise of a worthy English lady, whom the present writer once met in Europe, that he spoke the English language so well for an American.

WITH this number the eighth volume of NEW REMEDIES is brought to a close, and we take the occasion for thanking the friends who have aided us during the past year, in our endeavor to render its pages both attractive and valuable

to our subscribers. While the labor as well as the responsibility for doing so has rested mainly upon the editors, an acknowledgment is especially due to those who have kept us informed of matters here and abroad which were calculated to interest our readers.

We have also to thank our numerous confrères in journalism for kindly expression of appreciation with which they have aknowledged our efforts to make NEW REMEDIES both readable and reliable; and for the care they have taken to mention their editorial indebtedness to our columns. This can especially be said of our European exchanges; and it is to this fact that we attribute the very considerable increase of our list of foreign subscribers.

The method, first attempted by us last year, of furnishing monthly a complete index to the subject matter of each number, has met with almost unvarying approval, and has enabled us to supply omissions which might otherwise have occurred in the index which closes the volume. The value of a complete index of this nature is, we are convinced, too little appreciated by many who are not accustomed to refer often to the pages of their journals; and the want of an adequate one has often led to want of care in their preservation.

In entering upon the coming volume, we have no promises to make, besides our former assurances that we shall do all that is in our power to make NEW REMEDIES indispensable for its readers.

IT would be almost beyond possibility to notice all the novelties in apparatus and preparations which appear in the trade, and we have thus far confined ourselves to comments upon those which have been submitted directly to us. This feature of the journal is, however, capable of much greater extension, and it is one of our aims to accomplish this more perfectly in future. When the persons sending samples to us for editorial notice desire it, we will deposit them in the museum lately founded by the N. Y. College of Pharmacy, where they will not only be preserved, but will also come under the observation of a large number of the students and pharmacists of this part of the country.

Paregoric without Opium.—We note in a recent English exchange, prosecutions for the sale of paregoric without the opium, which would lead one to infer that the word "paregoric" is of no very definite meaning in that country.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

On Alstonia Scholaris and Alstonia Constricta.*

Alstonia scholaris R. Br. is a native of the Indian Peninsula, from the lower Himalayas to Ceylon and Burmah; also found in the Philippine Islands, Java, Timor, Eastern Australia, and tropical Africa. It is a handsome forest-tree, growing to a height of fifty feet or more. Some specimens attain a height of ninety feet. It has already been described so often that we refrain from doing so at this place, and content ourselves with referring to the National Dispensatory, 2d ed., page 140.†

It is the *Echites scholaris* of Linné. The adjective *scholaris* is given to it from the circumstance that its soft white wood is commonly used in the East for making thin writing-boards which are used by native pupils in schools. It is generally known as *Dita bark*. Its active principles have been pretty thoroughly discussed in previous numbers of this journal (see particularly the vol. for 1876, p. 146). Mr. Gruppe, of Manilla, is quoted as the first to have pointed out (in 1873) the existence, in its bark, of a bitter febrifuge principle. It does not seem to be generally known that Scharlée, in 1863, already published an article on the preparation of an alkaloid *alstonine*, which he obtained from an allied species, namely, the Javanese Poelé bark (from *Alstonia spectabilis* R. Br.), in the *Geneesk. Tijdschr. voor Nederlandsch Indië*, X., 209.

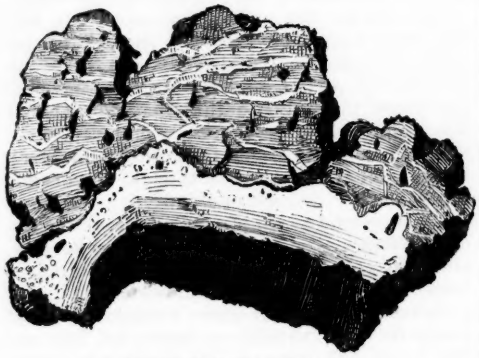
Alstonia constricta F. von Müller is a native of Queensland, being found between the Burnett and Burdekin rivers; at Rockhampton; along the Nerkool and Castle Creeks; in the Natal Downs and near Mount Pluts. It also occurs in New South Wales, along the Hastings, Clarence, and Darling Rivers, and in the Northern woods. This tree furnishes the *Bitter-bark* of the colonists, which is also known as *Australian Fever Bark*. It is a tall shrub or tree, attaining sometimes a height of forty feet, and is quite glabrous. It has opposite leaves, on long petioles, mostly oblong-lanceolate, but varying from almost ovate to narrow-lanceolate, acute or acuminate, the primary veins being distant, oblique, and not very prominent, three to five inches long. Flowers numerous, in corymbose cymes, either solitary and terminal, or two together in the fork of the branches, and shorter than the leaves. Calyx-segments ovate, almost acute, about one-half line long, with a few minute and irregular glands at the base inside. Corolla-tube about one line long, the lobes about two lines long, glabrous or

* This article forms the answer to query No. 655, on page 368.

† Compare also: Pharmacographia, p. 378; Manuel Blanco, Flora de Filipinas, p. 109; De Candolle, Prodromus 8, 408.

slightly bearded inside at the base, the right-hand edges overlapping in the bud. Follicles from three to four inches to thrice that length. Seeds linear, flat or concave, pubescent, four to six lines long, ciliate with long hairs at the upper end and shorter ones at the lower end* (F. von Müller). This species differs from the rest of the genus, and approaches Tabernæmontana in habit and foliage, and usually in the presence of small glands at the base of the calyx inside. The fruit and seeds are, however, those of Alstonia.

F. v. Müller and A. Rummel obtained from this bark a proximate principle, supposed by them to be an alkaloid, which they have called *alstonine* (see Wittstein's *Organic Constituents of Plants*, etc., transl. by F. Müller, Melbourne, 1878, p. 330), which differs from the active principle of the Dita bark chiefly by its behavior towards concentrated acids, and by its fluorescence, which is not recorded of the latter.

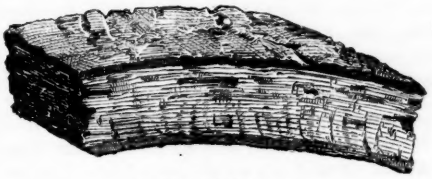


Alstonia constricta F. von Mueller.

The bark was also examined in Europe, but the analysts did not quite agree in their results. Otto Hesse had already thirteen years previously examined an Australian bitter bark, which was found to agree in every respect with the samples examined lately by other chemists, and known to be authentic specimens of the bark of Alstonia constricta. This would seem to warrant us in accepting Hesse's analysis as the most reliable one. He found in the bark two alkaloids, which he respectively named Chlorogenine and Porphyrine, but he did not find a bitter principle. Hesse suspects that Müller and Rummel's alstonine was nothing else but an impure Chlorogenine.

Recently, however, the bark has been again analyzed by Oberlin and Schlagdenhauffen, who announced the discovery of two alkaloids, one crystalline, and the other amorphous. The bark was first extracted in a displacement apparatus with warm ether, as long as the latter became colored. The amount of apparently crystalline (orange) substance taken up by this amounted to only 1.038 per cent. The bark was then exhausted with boiling alcohol, which took up 27.74 per cent more, and it had then lost all its bitterness. Next it was boiled with water which took up 1.375 per cent of saline, and a small quantity of organic matter. The alcoholic extract was not examined. After evaporating the ethereal solution, the residue was treated with very dilute hydrochloric acid to remove fat. The solution, being filtered through charcoal, gave a nearly colorless filtrate which had a decided blue fluorescence. After having ascertained the presence of an alkaloid, various methods were tried to separate it. This was only accomplished after repeated solutions in ether, redissolving in hydrochloric acid, and precipitating by ammonia, when the final ethereal solution of the precipitate, inclosed in a perfectly closed test-tube, yielded a crystallization of the alkaloid, which the discoverers propose to call alstonine.

Being in possession of authentic samples of the barks both of Alstonia scholaris and of Alstonia constricta, we have caused some cuts to be made, showing the appearances of both barks in their natural size.



Alstonia scholaris R. Br.

A Handy Bottle-Stopper.

Mr. Thomas D. Stetson, Patent Solicitor, of 23 Murray street, in this city, has the right to dispose of a patent which is so simple as hardly to require illustration, and which is precisely the thing demanded in a great variety of bottled goods. It is a good example of the class of articles which are so simple and useful that we wonder that they have not been sooner utilized. After closing a bottle with a short cork, the top of which is flush with the lip, the top of a longer cork is attached to it by means of wax. The large end of the second cork may be broad enough to fit evenly with the edge of the bottle-lip. In opening the bottle, the long cork is first broken off, and the short cork is then removed with a knife-point or cork-screw, and thrown away, and the bottle is then closed with the long cork, which is reversed for this purpose.

There is often much trouble experienced in securely closing medicine and other vials, which have been tightly corked to preserve their contents, owing to the necessity for mutilating the cork in order to extract it, and this method is just the thing needed in such cases.

* Flora Australiensis, by G. Bentham and F. v. Müller, IV., 314.

[Original Communication.]

ON THE SYRUPS OF THE U. S. PHARMACOPŒIA.

BY S. A. D. SHEPPARD.*

In a study of the characteristics and various proportions employed in the manufacture of the syrups now officinal in the U. S. Pharmacopœia, it may not be unlikely that we shall arrive at results which shall increase the value of this class of preparations. First, we will observe that in nearly every case, heat is employed to dissolve the sugar. After a considerable experience, the writer would suggest that all syrups be made by the cold process and, also, that they be made by agitation of the menstruum with the sugar, rather than by percolation. The former has proved, in his hands, to be much more practical than the latter, and, in every case, without a single exception, very satisfactory.

For articles on this subject see *Amer. Jour. Phar.*, 1871, page 498, and 1875, page 390; *Proc. Amer. Phar. Assoc.*, 1875, page 607.

Some good pharmacists say that syrups should be filtered through paper. The writer, of course, admits that this plan gives a bright, handsome syrup, but contends that it is not a practical direction to insert in the Pharmacopœia. So few pharmacists would heed the direction that it would be a dead letter, like some of the laws on the statute books of the Commonwealth, and it is an admitted fact that *no* law is better than a law that cannot be enforced. The process is tedious, somewhat wasteful, and not really necessary; therefore, let us direct the syrup to be strained as heretofore. The various forms of absorbent cotton, now so common, afford very good material for the purpose.

Now let us briefly examine each syrup.

Simple syrup, or syrup, seems to need no change. The proportions have remained practically unchanged since 1808, and give universal satisfaction. Fifteen parts of sugar and eight parts of water will make about the same syrup we now have. Attention should be given to the quality of sugar.

The syrups of gum-arabic, almonds, garlic, lemon, rhubarb, rose, blackberry, tolu, ginger, and iodide of iron seem to need no alteration.

In syrup of citric acid, it would be better to rub the citric acid and oil of lemon separately, each with a fluid ounce of syrup.

In syrup of orange flowers, make the menstruum one-half orange-flower water and one-half distilled water.

Mr. Kelly† will give us an improved formula for syrup of orange peel, that we may have a syrup with a fine flavor, this syrup being a vehicle only. This can be accomplished by using fresh orange peel.

In making syrup of ipecacuanha, the resin should be precipitated by mixing the fluid extract with water, filtering through carbonate of magnesium or precipitated chalk, and then dissolving the sugar in the filtrate.

In syrup of rhatany, use the second formula only.

Syrup of lactucarium needs revising. Mr. Goodale will do it well.

Aromatic syrup of rhubarb can be improved by percolating the drugs, mixed with a proper proportion of clean sand, with a weak alcoholic menstruum, and dissolving the sugar in the percolate. Another plan would be to exhaust the rhubarb by percolation with water. Make a syrup by dissolving sugar in the percolate. Make an alcoholic solution of the volatile oils of cassia, cloves, and nutmeg, and then incorporate it with the previously made syrup, or the volatile oils might be incorporated directly with the syrup. The writer prefers the first process, in which the drugs themselves rather than the volatile oils are used.

A little glycerin added to syrup of wild cherry might make it more stable, though the present formula is a very good one, indeed.

In compound syrup of sarsaparilla, the guaiacum serves no good purpose; its active principle, the resin, is nearly all separated in the filtration after the addition of water, and what little remains of it only serves to make the syrup unsightly. It should certainly be left out. Mr. Groff will give us this formula in an improved shape.

Syrup and compound syrup of squill need revising. Mr. Bartlett has prepared formulæ, in parts by weight, for these preparations, obviating the difficulties that sometimes arise in striving to make them bright and handsome.

Syrup of seneka, as now made, is often rather an unsightly preparation, though few who taste it doubt its activity. If the evaporated tincture be allowed to stand twenty-four hours before filtering, a much more handsome syrup will be obtained. Mr. Edwin Baker, of Shelburne Falls, is working up an improved formula for this preparation.

An important question now remains to be answered. What new names and formulæ shall be added to the officinal list of syrups?

There are eight syrups about which there seems to be no question as to the desirability of their being placed in the officinal list. Syrup of the phosphates of iron, quinia, and strychnia;

* Abstract of a paper read at a meeting of the Association of the Alumni of the Massachusetts College of Pharmacy, June 5th, 1879. The paper opens with a historical review of the changes in the formulæ for syrups since 1820, which has been omitted for want of space.

† The gentlemen mentioned in this paper a sprospective authors of improved formulæ, have since then furnished to Mr. Sheppard the results of their labors, and Mr. Sheppard has incorporated them into his revision of the syrups of the U. S. Ph., which is now in the hands of the chairman of the Committee.—Ed. N. R.

compound syrup of phosphates; syrup of lacto-phosphate of iron; syrup of lacto-phosphate of lime; syrup of the hypophosphites of lime and soda; syrup of the hypophosphites of lime, soda, potash, and iron; syrup of tar, and syrup of lime.

Besides these, syrups of iodide of manganese and licorice, and compound syrup of stillingia have been suggested to the committee by various parties.

The syrup of the phosphates of iron, quinia, and strychnia is the most important of these proposed additions. Much difficulty has been experienced by pharmacists in obtaining a stable preparation. It requires both skill and care in in its manipulation.

Dr. Squibb's formula for syrup of lime is very good, though a denser syrup might, perhaps, for some reasons, be preferred.

Mr. Kelly will furnish a formula for syrup of lacto-phosphate of lime, and Mr. Melvin for compound syrup of phosphates.

The writer has thus tried to place before you some facts relative to this class of officinal preparations, and now requests friendly criticism, as a means for the improvement of our officinal formulæ.

BOSTON, June 5th, 1879.

Apparatus for Preparing Ferrous Volumetric Solutions.

BY W. F. R. STOCK.

THE apparatus usually employed to procure the absence of atmospheric air during the solution of metallic iron in acids consists of a flask, fitted with a cork, through which is passed a tube bent twice at right angles. When in use, the free end of this tube is made to dip below the surface of water contained in a second flask or small beaker. The chief defects of this arrangement are:

1st. Want of portability.

2d. Necessity for some form of support for tube.

Having recently had occasion to execute a considerable number of determinations of metallic iron in samples of steel and iron, I constructed an apparatus entirely free from these defects, and very much more simple and convenient to manipulate. The following is a description of the new arrangement, which will be readily understood by the aid of the accompanying cut.

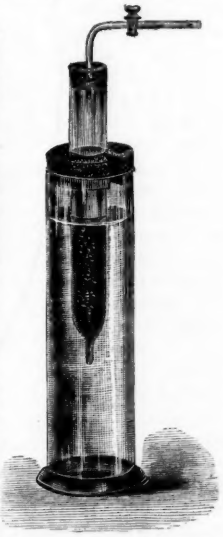
A is a flask of 200 cc. capacity; B, a glass funnel 7 mm. diameter; C, a glass tube of such a size as just to pass through the stem of funnel B, an india-rubber joint connecting B and C, and forming a perfectly tight joint; E, an india-rubber stopper, bored so as to pass stiffly upon C.

Perhaps a word upon the construction and use of the apparatus may be admissible. Having selected a tube of the proper size, the upper bend is turned on, so that the point of the tube C, which should be narrowed to 1-5 mm., falls into the apex of B. B is then placed in position and secured by the joint; the stopper E is next fitted on C, and finally the lower bend of C is turned on, taking care to allow so much tube as will prevent E being injured by heat.

In working the apparatus it is only necessary to place sufficient water in B to cover end of C, in order to secure exclusion of air. The most certain source of heat is a sand-bath. Using this, I have never had a case of untimely regurgitation. Immediately the required solution is effected, the apparatus is removed from the source of heat, and recently boiled water is run into the funnel B to the required extent.—*Chem. News.*

A Simple Sulphuretted Hydrogen Apparatus.

ONE of the principal defects of the ordinary sulphuretted hydrogen apparatuses is the facility with which they become leaky; hence it is an advantage if an apparatus has but few stop-cocks and joints. Among the best smaller contrivances which possess this advantage is the following:



A glass cylinder, about 40 cm. (nearly 16 inch.) high and 12 cm. ($4\frac{3}{4}$ inch.) wide, is partially filled with diluted sulphuric acid. It is closed with a stopper having a lateral notch, and carrying a rather long tube, drawn out at its lower end to a small point. This tube is filled with coarse fragments of sulphide of iron, and is closed with a tight-fitting cork, through which the delivery tube (provided with a faucet) passes. When the apparatus is not in use, the inner cylinder is pulled upwards, until its point merely is immersed in the liquid. When the gas is wanted, the tube is depressed to the position shown in the cut, and the faucet opened. The acid then enters from below, and generates a more or less rapid current of gas, which may be regulated by means of the faucet. When the latter is shut off, the pressure of gas inside the inner cylinder depresses the liquid so as to empty the tube altogether. This apparatus is, of course, also applicable for the preparation of hydrogen gas by means of dilute acid and granulated zinc.

Johann Maria Farina.

DURING the 17th century an Italian, named Feminis, living in Cologne, invented a perfume consisting of a mixture of dilute spirits and essential oils, which has since acquired the name of *Eau de Cologne*, or "Cologne Water." The original formula, now unknown, has undergone such numerous modifications that the name affords no indication whatever of the particular odor possessed by the mixture. In 1706 there was living in that city another Italian, named Giovanni Maria Farina, who was born in 1685, at Santa Maria Maggiore, in the valley of Vigezza, and who was a dealer in Italian wares, silks and perfumery. About this time he invented a formula for this perfume, and was soon able to give up other branches of his business and devote himself to this exclusively. Owing to the excellence of his preparation, *Eau de Cologne* soon became quite famous, and numerous manufactories of it came into existence, so that the increase of business has resulted in the production of several million bottles annually in that city alone.

The original formula of Giovanni has remained a family secret, and others have been able to imitate only the name, label, and style of package. The use of the term "gegenüber dem Jülichs Platz" (opposite the Julichs Place) has been assumed by those who have established themselves near the locality where the founder of the Farina establishment and his successors have always carried on their business, and many suits at law have been instituted to protect the latter in their trade rights.

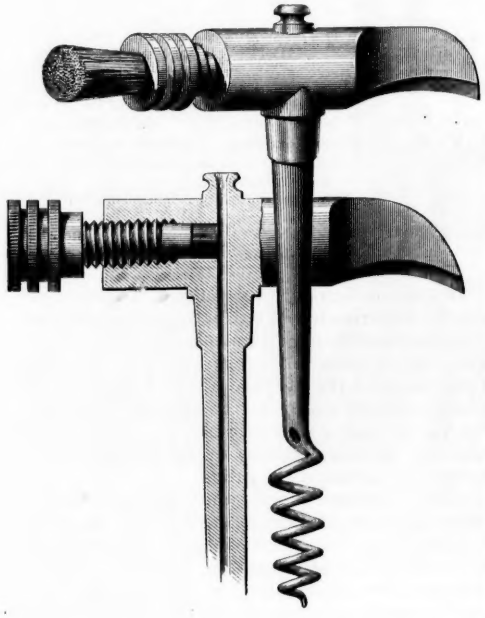
The following chronology of the family is given in a recent number of *The British Mail*, from which we also take the adjoining portrait of the originator of the business.

In 1726, to extend his business, Giovanni (II. or Johann as he was called in Cologne) sent to Italy for his brother John Baptist, and took him into partnership. The latter, however, died on the 24th of April, 1732, and John Maria, who was unmarried, saw himself again alone. He therefore invited in 1735 his nephew and godson John Maria (III.), born 1713, the son of the before-mentioned brother John Baptist, to come to him from his native country. At his death, which took place on the 25th of September, 1766, he bequeathed by testament to his nephew, and to him alone, his business and his secret. John Maria, the nephew of the inventor, now continued the business till his decease in June, 1792, and transferred the same to his three sons, John Baptist (IV.), born the 6th of February, 1758; John Maria (V.), born 22d of December, 1762; and Charles Anthony Jeronimus (VI.), born the 7th of March, 1770. On the 26th of March, 1806, the second of the three brothers died unmarried, and left his part of the business to the two survivors. In the year 1830, John Baptist (deceased 30th of January, 1844) resigned his share of the business to his son John Maria (VII.), born the 26th of August, 1796, whose widow and children, after his decease on the 16th of September, 1833, succeeded as partners in the house. Charles Anthony Jeronimus, who died on the 5th of April, 1850, made over his share of the business

in 1841 to his son John Maria (VIII.), born the 22d of August, 1809, one of the present heads of the firm.

Among the numerous formulas which have been given as "the veritable one," the following appears in the *Dictionnaire des arts et manufactures:*

Balm and mint of Notre Dame, each 350 grams; petals of roses and violets, each 120; lavender flowers, 60; absinthe, 30; sage and thyme, each 30; orange-flowers, nutmegs, mace, cloves, and cinnamon, each 15; camphor and angelica root, each 8. These ingredients are digested in 600 lbs. avoirdupois of rectified alcohol for 24 hours, adding two lemons and two oranges cut in slices. The mixture is then distilled by the heat of a sand-bath until 440 lbs. have passed over. To this product are then added essences of lemon, of cedrat, of balm, and of lavender, each 45 grams; essences of neroli and of rosemary, each 15; essence of jasmine, 30; essence of bergamot, 350. The whole are then thoroughly mixed and then filtered.



Lant's Cork-screw and Bottle-faucet.

MR. WM. E. LANT, of Lancaster, Pa., has invented a combined cork-screw and bottle-faucet shown in the adjoining illustration, which is likely to be serviceable in drawing effervescing liquids, and particularly for the use of champagne, in small quantities, in cases of sickness. The figure scarcely demands a description, but it may be said that the end of the milled screw in the handle has a soft-rubber head, which, by tightening the screw, will close the passage through the shank, and prevent the escape of liquid or gas.—*Sci. Amer.*

[ORIGINAL COMMUNICATION.]

ON THE RESINS CONTAINED IN JALAP.*

BY ALEX. F. STEVENSON, PH.G.

THE officinal "Resin of Jalap" is obtained by evaporating an alcoholic tincture of jalap to a small bulk, pouring this into water to separate a small amount of accompanying aqueous extract, washing the precipitate several times with water, and finally straining and drying with a gentle heat. The title "Resina Jalapæ" does not seem to be quite appropriate; "alcoholic extract" would be a more proper name for it, as it certainly consists of two distinct resins, namely, "Convolvulin" and "Jalapin," which are not only physically, but chemically and therapeutically distinguishable the one from the other, as the following experiments and trials executed by myself, for the most part in the laboratory of this College, will, I hope, tend satisfactorily to show.

Having for this purpose procured some of the best "Resina Jalapæ" of the Pharmacopœia that the market afforded, I proceeded to free it of any mechanical impurities that it may chance to contain (subsequently found to be silicious and ligneous matter, in small but unimportant quantities) by dissolving it in absolute alcohol, filtering, evaporating, and drying. Having thus got rid of the above impurities, I reduced it to a fine powder, and thoroughly incorporated with it an equal bulk of sand (which I had previously purified by boiling with acid and washing); to this mixture I again added its bulk of the same sand with similar precautions.

The reason for mixing sand with the commercial article was the better to facilitate the separation of the "jalapin" from the "convolvulin" by the method of percolation below described.

I may here state that the undermentioned process succeeded remarkably well, not only in the more important point, viz., of effecting a complete separation of the above resins, but also in offering a method so much quicker, cleaner, and more easily managed than that of precipitation, as usually followed in such manipulations.

Then, having divided the mixture into six portions, I carefully and tightly packed them into as many small numbered funnels, the necks of which were loosely stopped with cotton and fitted to small glass flasks by the aid of corks. They were also kept carefully covered with glass plates to prevent evaporation during the process. I then passed ether through No. 1, and the percolate through No. 2, and that of No. 2 through No. 3, and so on, continuing to pour fresh ether on No. 1 until, on evaporating a small quantity on a watch-glass, it left no residue; then adding the fresh ether to No. 2, and then to No. 3, and so on, as they successively became ex-

* Abstract of a thesis presented to the College of Pharmacy of the City of New York.

hausted, and until a small portion of the menstruum passed through all the funnels showed no color and left no residue on evaporation.

I then mixed the percolates and set the liquid aside, and having removed all the residues from the funnels, and thoroughly dried and repacked them as before, I continued the percolation with absolute alcohol in the same manner and order as above described, until completely exhausted.

Thus having completely separated the resins by means of these solvents, and removed the ether from that of the ethereal percolates with the aid of a water-bath, I obtained a dark-colored "soft resin," of the consistence of thick molasses, having all the color, odor, and taste of the resin of the Pharmacopœia, but differing from it and that of the alcoholic percolates mentioned below, in being totally soluble in ether, petroleum naphtha, carbon disulphide, and oil of turpentine, and also in possessing cathartic properties.

This is no doubt the jalapin of Mayer (formula: $C_{34}H_{56}O_{16}$) and the pararhodeoretin of Kayser.*

On evaporating the alcoholic percolates to dryness, I obtained a "hard resin," odorless and tasteless, but having the consistence and color of that of the Pharmacopœia, and also retaining its therapeutic properties, but with the important difference of being entirely devoid of that disagreeable tendency to griping which almost always accompanies the cathartic action of jalap.

It also differs chemically from the officinal resin and that mentioned above "jalapin" in being insoluble in ether, petroleum naphtha, carbon disulphide, benzol, and oil of turpentine, and also in giving off an odor much resembling whiskey when its solution in caustic potassa is slightly heated.

This is without doubt the convolvulin of Mayer (formula: $C_{31}H_{50}O_{16}$) and the rhodeoretin of Kayser.†

These experiments, which were at first made upon good commercial resin of jalap, were afterwards repeated so as to apply them to resin of jalap, prepared by myself from good commercial samples of whole as well as powdered jalap, and the results obtained were similar to those detailed above.

The following is a tabular statement of reactions distinguishing "jalapin" from "convolvulin" with the reagents mentioned:

1. *Solvents.*

SOLVENT.	JALAPIN.	CONVOLVULIN.
Chloroform.	Readily soluble.	Slightly soluble.
Ether.	Very soluble.	Insoluble.
Petrol. naphtha.	Slightly soluble.	Insoluble.
Oil turpentine.	Slightly soluble.	Insoluble.
Benzol.	Slightly soluble.	Insoluble.
Carbon disulp.	Easily soluble.	Insoluble.
Water.	Slightly soluble.	Slightly soluble.
Muriatic acid.	Slightly soluble.	Readily soluble.
Sulphuric acid.	Very soluble, with production of maroon color, changing to black.	Readily soluble, with production of bright-red coloration.
Caustic potassa.	Easily soluble.	Easily soluble with production of odor of whiskey when heated.
Ammonia.	Readily soluble, more so than convolvulin.	Slightly soluble.

2. *Reactions with oxidizing agents* on convolvulin and jalapin dissolved in sulphuric acid (conc.).

AGENT.	JALAPIN.	CONVOLVULIN.
K_2CrO_4,CrO_3.	Produces odor of rancid butter and reddish brown color	Produces odor of rancid butter and olive-green color.
$K_2Mn_2O_8$.	Same reactions.	Same reactions.
KNO_3.	Same reactions, but not so strong.	Same reactions.
$KClO_3$.	Same reactions, but not so strong.	Same reactions.
MnO_2.	Same odor and color dark-green.	Same odor and color rose-pink.

In conjunction with this subject I also made several experiments in extracting the resin from the powdered drug, with alcohol of different sp. grs., especially those of 0.796 (absolute), and 0.835 (officinal), for the purpose of ascertaining if the yield would be thereby affected, and if so, which way, and also to determine the quantity of alcohol, sp. gr. 0.796, that would be required to completely exhaust the drug.

After six repetitions of the experiment on as many portions of the same sample of the drug, I found that the yield of resin was the same in every case, and that the measure of menstruum was also alike for each experiment, whether of sp. grs. 835 or 796, although the loss in weight of the drug after being exhausted, removed, and thoroughly dried was found to be greater in proportion as the alcohol was diluted.

Removal of Trichinæ.—DR. HÆBERLEIN reports that an apothecary in Crailsheim, Mr. Blezinger, found alcohol, as well as salicylic acid, in quantities of 10 to 15 grams (⅓ to ½ oz.) to cause the rapid disappearance of trichinæ. Thinking to be able to preserve human flesh and pork, containing trichinæ, by means of salicylic acid, he sprinkled the latter, in powder, over the specimens, but found shortly afterwards that the trichinæ had entirely disappeared.—*Neueste Erfind. und Erfahr.*

If this information is authentic, it might be worth while to try the effects of salicylic acid upon persons infected with trichinæ.

* *L. Gmelin's Chemistry*, Vol. XV., page 345, and Vol. XVI., page 405. *Wöhler's Organic Chemistry*, "Remsen," page 421. *Watt's Dictionary of Chemistry*, Vol. III., page 438. *Husemann, Pflanzenstoffe*, page 886.

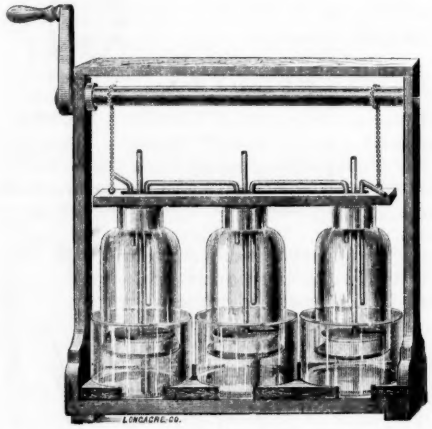
† *L. Gmelin's Chemistry*, Vol. XV., page 342, and Vol. XVI., page 154. *Wöhler's Organic Chemistry*, "Remsen," page 420. *Watt's Dictionary of Chemistry*, Vol. II., page 15. *Husemann, Pflanzenstoffe*, page 883.

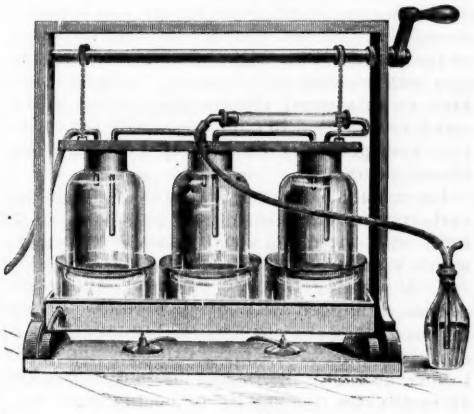
The terms jalapin and convolvulin, particularly the former, have often led to misunderstanding. "Jalapin" is now applied only to the resin obtained from Orizaba root or Male Jalap, or from Scammony. See May number, page 155.

On Ozone and its Solubility.

DURING the last twenty years, there have been placed on the market at various times pretended solutions of ozone, under different names, some of which even received indorsement by prominent medical men, but which were afterwards ascertained to be either extremely weak solutions of ozone, or containing, in place of the latter, hydrogen peroxide, or nitrogen oxides. Recently an enterprising firm is said to have made preparations for putting a "strong solution of ozone" on the market. We take this opportunity of placing before our readers the results of some late investigations of Prof. Albert R. Leeds, of the Stevens Institute, which will show that a *strong* solution of ozone is an impossibility.*

Preparation of Ozone.—The methods usually employed to generate ozone by means of the slow oxidation of phosphorus, partly immersed in water, are quite unsatisfactory. Neither that given by Miller (Elements of Chem. [2] I. 23), nor those employed by Arendt (Lehrbuch d. anorgan. Chemie, 416), or Gorup-Besanez (Anorgan. Chemie, 358) produce satisfactory results.





In a work published much earlier than the two last quoted, an apparatus is described and illustrated (A. Riche, Leçons de Chimie, Vol. I., p. 106), which was a step in the right direction. A balloon was provided with an entrance and exit tube, the latter extending nearly to the bottom, so that a slow continuous current of air might be drawn through by means of an aspirator. The ozonized air was washed in the usual manner, and the liquids to be subjected to the action of ozone were placed in a second wash-bottle. This contrivance was adopted—a large bell-jar turned upside down and covered with a glass plate being substituted for the wash-bottle—when it was desired to ozonize dyed goods, flowers, and similar large objects. The apparatus was further improved by using a bell-jar in place of the balloon. The bell was set in a dish containing a number of sticks of phosphorus, the water with which they were partly covered acting as a seal. The disagreeable operation of occasionally cleansing the phosphorus, by scraping, was obviated by immersing them, before using, in a mixture of potassium bichromate solution and sulphuric acid.

These improvements, however, were of small importance compared with that effected by substituting the bichromate mixture for the water in the generator itself. Prof. Leeds found, that the scanty, fitful evolution of ozone was thus replaced by a copious and constant supply. The dish was now replaced by a jar capable of holding a considerable amount of the bichromate solution, and by permitting a considerable change of level in the liquid, the air could either be drawn through by aspiration, or forced through by pressure. After many trials, the best way of disposing the phosphorus was found to be the following: A number of small pieces of phosphorus having been melted in warm water, in small watch-glasses, to buttons, these were placed on discs of lead, placed in the jar so that each cake exposed about 9 square cm. of surface.

It was found, as will be seen from results stated below, that the air ozonized in one bell, could have its ozone percentage increased by passing through a second bell similar to the first, through a third, and so on. But as the manipulation of three, or even two bells, connected with glass tubes, was troublesome, it became necessary to arrange suitable machinery. The bells were, therefore, cemented into heavy brass caps (see Fig. 1). Through these caps and the paraffined cork beneath, connecting tubes of heavy glass were passed and a sliding glass rod, which terminated below in a horizontal circle. The latter carried the disc of sheet lead, before

* The following is an abstract of Prof. Leeds' paper in the *Journ. of the Amer. Chem. Soc.*, Vol. I., 10, 220. We are indebted to Prof. Leeds for the loan of the cuts.

mentioned, with a slot permitting its removal. The caps were then screwed fast to a board having a suitable opening down its middle to permit of passage of tubes, etc., and this again fastened to chains by which it might readily be raised or lowered. The frame is made of such height that the jars may be easily slipped from under the bells when desirable.* Thermometers are fastened into the side of each bell, their bulbs dipping just below the surface of the liquid.

It was evidently essential to convenient working of this apparatus to have a flexible connection between exit tube and wash-bottle. But herein rose a very serious difficulty, India-rubber tubing being destroyed. Through suggestion of Prof. Silliman, and by kindness of Mr. A. G. Day, the patentee, Prof. Leeds became provided with a great variety of *kerite* tubing. Weighed samples of each kind were subjected to equal amounts of ozone for equal intervals, their changes and the products of decomposition noted. Without detailing these experiments, suffice it to say that the specimens which gained most in weight underwent greatest decomposition, some indeed crumbling to pieces, while others which gained none, also did not change in appearance or physical characters. Of these the most satisfactory was selected, and from it as a guide, Mr. Day manufactured the ozone-resisting kerite, which is now used in connection with the ozonator, and generally during the process of this investigation.

Later on, it became desirable to introduce certain improvements in the apparatus. A new form was, therefore, constructed (see Fig. 2), which has the following improvements:

1. A washing tube 25 cm. long, and 3 cm. diameter, plugged with damp cotton-wool, and fastened along the cross bar of the apparatus, so as to intervene between the exit tube and kerite tubing, and filter out oxides of phosphorus, etc. In most cases it is greatly to be preferred to a wash-bottle. A similar washing tube, plugged with amianthus moistened with alkali, is in like manner attached to the inlet tube when it is desired to purify from carbonic acid the air employed.

2. The movable rods and stages are done away with, and the phosphorus cakes are supported on leaden discs, which rest on leaden brackets let into holes bored through the bells a little way above their lower rims.

3. The jars rest upon cross-pieces at the bottom of a long copper water-bath, beneath which lamps are placed so as to retain the temperature at the point of maximum evolution of ozone (24° C.). These tanks are also provided with inlet and exit pipes, so as to permit of the jars being cooled by a current of water if desirable.

*These and the above described ozonators are manufactured by S. Hawkridge, successor to Wales & Co., Stevens Institute of Technology, Hoboken, for $30.

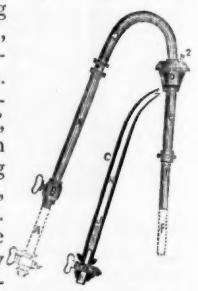
Solubility of Ozone in Water.—Not only is but a small amount of ozone produced in air or oxygen passed through the apparatus, even at the most favorable temperature (20° C.), hardly exceeding 24 milligrams of ozone per litre of air or oxygen passed through; but its solubility in water is likewise very small: 1 litre takes up, between 0.5 and 3.2° C., only 9.4 milligrams of ozone.

Stopper for Salt-Mouth Bottles.

MR. RICHARD T. ELLIFRIT, of Platte City, Mo., is the inventor of a bottle-stopper which can likewise be used as a scoop to facilitate the handling of the contents of the bottle or jar to which it belongs; thus avoiding the necessity of an independent scoop and preventing the admixture of foreign substances.

Self-acting Siphon.

HERMANN BRANDES, of Hamburg, has patented a new kind of siphon which is illustrated above. It is constructed of glass, metal, rubber, or other material, according to the nature of the liquid to be passed through it, and is set in action merely by pulling down the external tube *A*, until it is in the position indicated by the dotted lines. The outer tube *A* fits accurately upon an inner tube *C*, which constitutes the siphon tube proper, while the sliding delivery tube *A* is provided, at its outlet, with a faucet. After the siphon is once started, the faucet may at any time be turned off, and afterwards merely opened when some of the liquid is to be drawn off. The stopper *D* is provided with a small tube *E* for the admission of air, which may be closed when the siphon is not in operation.—*Illust. Patent-Blatt*, No. 56.



Indestructible Filter.—DR. HERM. KRÆTZER recommends the use of gun-cotton as an indestructible filtering material. A small amount of it placed into the neck of a glass funnel will be sufficient to filter acids and alkalies, and even potassium permanganate solution.—*Neueste Erfind. und Erfahr.*

Gun-cotton is not nearly as indestructible as it would appear from the above. Strong sulphuric acid gradually decomposes it with elimination of nitric acid, and solutions of caustic alkalies, particularly when at all warm, eliminate the nitrogen oxide in form of nitrite and nitrate, thereby regenerating the original cotton.—ED. N. R.

[Original Communication.]

A NEW METHOD OF RECTAL MEDICATION.

BY F. E. STEWART, PH.G., M.D.

Advantage has long been taken of the absorbent power of the rectum as a means of obtaining the peculiar effect of a remedial agent upon the system; and, although the rectum, as an absorbing surface, is inferior to the stomach, medicines are frequently introduced by this organ with great benefit in cases of inability to swallow, irritable stomach, and in children's maladies. Unfortunately the rectum soon becomes intolerant, the mucous membrane irritable, and the medicament may be at once rejected or absorption delayed. This, and the difficulty attending the introduction of the substance through the anal aperture, guarded as it is by a tightly-closing sphincter, have always presented serious obstacles to rectal medication. Any plan, therefore, which shall to any extent remove these obstacles, and add to the utility of this important branch of therapeutics, must be of value, and it is with this purpose in view that the new method which forms the subject of this article has been devised.

For the introduction of remedies into the rectum a vehicle of sufficient consistence to overcome the resistance of the sphincter muscle is necessary. This is obtained, in the use of solids, by mixing them with some form of hardened fat, or with soap, and such a mass moulded into convenient form for insertion is called a suppository. Medicines in the liquid state are introduced by means of the syringe, and are technically known as enemata or clysters. The chief objection to the enema is that the amount necessary for injection stimulates the natural irritability of the rectum, often causing its expulsion; to the suppository, that the fat coats the bowel and greatly retards absorption. This latter fact has been satisfactorily proven by Ellerslie Wallace, M.D., Prof. of Obstetrics in the Jefferson Medical College of Philadelphia.

Another very serious objection obtains with regard to fats as a vehicle: it is that, when sufficiently hardened for successful insertion, their fusion point is often raised higher than the temperature of the body. Such suppositories melt so slowly in the rectum as to be comparatively worthless; they may fail altogether to soften down, and thus pass from the body unchanged; another is, that during summer in these latitudes the temperature of the weather is often above that of the body; suppositories, therefore, melting at the temperature of the body in such weather, lose consistence and turn into liquid fat.

Solutions of medicinal agents for rectal administration must be perfectly bland, a point often difficult to secure if they are injected in a condition permitting ready absorption, or they will not long be tolerated.

Consistence for insertion, concentration and blandness to prevent irritation, the use of a remedy in a condition to be readily absorbed, and the employment of a vehicle which shall not prevent absorption, are, therefore, the requirements for rectal medication. With these requirements in consideration, I have devised and beg leave to introduce the oleates for rectal medication, and the rectal capsule, a cylindro-conical case of gelatin, suppository-shaped, as a vehicle.

The great advantages claimed for the rectal capsule are: 1st. It does away completely with other vehicles for conveying the medicinal agent into the rectum, be it powder, extract, or fluid, provided that fluid is not a solvent for gelatin, the capsule itself giving the consistence, not its contents; the vehicle being entirely unaffected by the heat of any climate, yet still very soluble in the secretion of the rectum. 2d. It enables the employment of the oleates—liquid salts already famed for their power of permeating the tissues.

Much attention was drawn to the oleates by a paper on the treatment of persistent inflammation by the local applications of solution of oxide of mercury and of morphia in oleic acid, by Mr. John F. Marshall, F.R.S., Prof. of Surgery in University College, London, published in the *London Lancet* for May 25th, 1872. The facility and rapidity with which oleates are absorbed from the skin was then something quite new in therapeutics, and subsequent research has proven his suggestion relative to the substitution of the oleates for some of the older ointments, as being cleaner, more elegant, much more efficacious, and of practical value. The oleates of the alkaloids injected beneath the skin are also easily absorbed, presenting an admirable mode for hypodermic use, and the oleates, per rectum, only need some means to convey them to the mucous surface of the bowel, where they will be far more easily absorbed than by the epidermis, and free from the objections attending the hypodermic method of medication.

In proof that some medicines enter the blood more quickly by the rectum than by the stomach. J. Roberts Bartholow, Prof. of Materia Medica at the Jefferson Medical College, states in his work on Materia Medica and Therapeutics, that "The salts of morphia, atropia, and strychnia, in solution, are absorbed as quickly, and the last-named more quickly, by the rectum than by the stomach."*

Rectal capsules abolish the necessity for a suppository mould and a long and difficult process, thus materially cheapening the product and increasing its utility, enabling the pharmacist to manufacture to order, with the same dispatch as in making pills, or to keep a stock on hand, securely sealed from exposure to the air, thus preventing mould or rancidity. Oleic acid is a per-

* Page 9, ed. 1878.

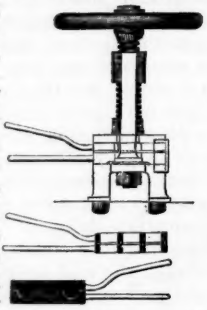
fect substitute for butter of cacao, or other fat, for equal diffusion of the medicinal portion, if locally irritating, without danger of retarding absorption, or, if the drug be mild and in the form of powder, soluble, or with an active principle soluble in the rectum, it may be placed dry in the rectal capsule for immediate insertion.

In relation to other properties of the rectal capsules, they are quickly soluble in water at 90° F. In water at 60° they swell up, become opalescent, very soft, and dissolve after long immersion. Filled with cold water and placed on a plate, they lose consistence in about eight minutes, so that very moderate pressure robs them of their contents. On the tongue they dissolve and disappear altogether in about three minutes, usually less, depending on slight variation of thickness in their walls. In the rectum they melt in about four minutes, but if removed in three minutes, one side will usually be found dissolved, thus liberating their contents. If filled with any ingredient melting at the temperature of the body, the rectal capsule will not delay its fusibility, and such article, inserted by means of the rectal capsule, will surely produce its effect almost as quickly with as without it.

Finally, these facts have been substantiated by thorough test in numerous cases in both New York and Philadelphia, in private and hospital practice.

Apparatus for Preparing and Filling Gelatin-Capsules.

PATENT No. 2,448, granted by the German Patent Office to A. Bergholz, of St. Petersburg, is described as follows: 100 parts of gelatin are covered with cold water, and allowed to macerate for several hours at the ordinary temperature. During this time the gelatin absorbs about twice its weight of water, without dissolving. It is then placed on a sieve, and exposed for some time to a strong jet of water, whereby any external impurities and dirt are thoroughly washed off. All excess of water having been drained off, the softened gelatin is transferred to a capacious porcelain capsule, and, after the addition of four parts of glacial acetic acid, or six to ten parts of glycerin, heated on a water-bath. The mass rapidly melts, during stirring, to a homogeneous liquid, which is strained through flannel or linen, when it is ready for use. Plates of glass (plate-glass) having been placed upon a perfectly level surface—to be ascertained by means of a spirit level—the melted mass is poured upon them in such quantity that, when it has gradually spread over the whole surface of the plate, it will form a layer of the desired thickness. In order that the mass may spread uniformly, a constant temperature of 20–25° C. (= 68–77° F.) should be maintained. After the lapse of twenty-four to forty-eight hours, the layer has dried up to a clear, transparent, and elastic disc. This is now cut into pieces corresponding to the surface of the metallic moulds, of which the accompanying illustration gives a sectional view. Each mould consists of an upper and lower piece; the latter is provided with semi-globular or semi-oval depressions, into which corresponding projections of the upper piece accurately fit. A sheet of the elastic gelatin of proper size having been placed upon the lower half of the mould, the latter is warmed to 40° C. (= 104° F.) and the upper half of the mould then pressed on it. After a few minutes the latter is removed. The proper quantity of the medicine to be inclosed having been deposited in each depression, a second disk of gelatin, previously treated in the same manner, is placed over it, so that the corresponding halves are exactly situated over each other, and the whole is placed under the press, the upper part of which contains a plate, warmed to 40° C. (=104° F.), which fits the shape of the capsules exactly. Pressure is now applied, whereby the two halves are united, and immediately afterwards the upper part of the press is exchanged for another, provided with circular or oval cutters, which, when depressed, cuts out the completed capsule from its connection with the remaining gelatin sheet.—*Illust. Patent-Blatt*, No. 56.



The Hectograph.

REFERRING to the article on this subject in our last number, we desire to add the following further information:

A very good elastic copying mass will be obtained by using the following proportions: glue or gelatin, 1 part; water, 2 parts; glycerin, 4 parts; to this, is to be added a few drops of carbolic acid, and enough whiting or white lead to make the whole milky. Other formulæ are said to be: glue or gelatin, 1; sugar or glucose, 1; glycerin, 6; barium sulphate ("terra alba"), 3½ parts.

The addition of barium sulphate and of dextrin facilitates [?] the removal of the writing with cold water. The so-called *chromograph* composition is made as follows: 100 grams of finest gelatin are melted with 400 to 500 cubic centimetres of moist barium sulphate, in a capsule, on the water-bath. 100 grams of dextrin are then added, under constant stirring, and, finally, 1,000 to 1,200 grams of glycerin. The mass is then removed from the water-bath, stirred occasionally (to prevent the barium sulphate from precipitating), and cooled as much as possible, taking care, however, to have it still barely fluid. It is now poured into flat tin dishes, and rapidly cooled off. The above proportions need not be

exactly followed with every kind of gelatin, since they all require somewhat different quantities of liquid to produce the same consistence. If the mass turns out too hard, more glycerin must be added; if the writing can be removed only with difficulty, even with luke-warm water, more filling (barium sulphate) or dextrin is necessary. The best and sharpest impressions are obtained by using the finest English gelatin, glycerin, and pure precipitated barium sulphate, washed by decantation, without dextrin.

A correspondent of the *English Mechanic* says: "I have not been successful with the ink prescribed: 1 violet methylated aniline (Hoffman's purple ?), 7 distilled water, and 1 alcohol—so I have bought it at the most extravagant price of 1*s.* per ½-ounce bottle; but acetate of rosaniline [roseïne], boiled down in alcohol until it does not run in writing, forms a capital red ink. The purple ink is dosed with oil of almonds, I suppose, to mask its real composition.

To use the process, write on any kind of paper with the ink, taking care that the writing is *thick* enough *to show a green lustre* on drying. When dry, place it, face downward, on the jelly, rub it gently to bring it well in contact, and leave for one or two minutes [five minutes are better]; then peel it off. It will leave a large portion of the ink neatly transferred to the jelly; then place the paper to be printed on the writing, and pass the hand over it; bring it well into contact as before, peel it off, and it will bring away a perfect copy of the original. In this way, sixty to eighty copies may be made. By using a thick pen and *plenty of ink*, one hundred good prints may be taken."

Collography.

A GREATLY improved process, which is likely to supersede the *hectograph* and its congeners, appears to be that invented by R. Jacobsen, who, by the way, was also the originator of the latter process. The principle of the hectograph is this, that as many impressions may be taken from *one* writing as the quantity of ink, once absorbed, will permit. In the new process, the writing is transferred upon a specially prepared paper or linen, and inked with a roller for every separate impression. The writing is first made with a peculiar log-wood ink upon ordinary paper, and transferred upon the prepared surface. An ordinary printer's roller, full of printers' ink, is rolled over the surface, when it will ink the writing without soiling the remainder of the surface. A sheet of paper is placed over it, and an impression made, by gently rubbing a paper-knife, etc., over it. Before the next impression, the surface is inked again. All impressions are equally dense in color, and, as they are really *printed*, copies made by this process at present enjoy the exemptions granted to other printed matters by the German postal laws.—*Industrie Blätter*, No. 30

RECENT PAPERS.

Elegant Process for Capsuling Bottles.—In France a new system of capsuling bottles has come into vogue which is more rapid than the use of metal capsules and is thought, by some, to give a more elegant effect. The neck of the bottle is dipped into a viscous volatile liquid and immediately withdrawn with a rotary movement. This leaves a transparent capsule the effect of which is improved by first attaching a monogram or trade mark to the top of the cork or upper-end of the bottle-neck. The following is the formula for the liquid as given by M. Loulan, of St. Emilion, and copied by the *Chemist and Druggist*.

Yellow resin	20 parts.
Ether	40 "
Collodion	60 "
Fuchsine, or other tint	q.s.

Influence of Soil on Medicinal Plants.—The extent to which a medicinal preparation may be affected by the soil upon which the plant it is prepared from has grown, is illustrated by an experience of M. Gérardin, Pharmacien, in the Marne department. Having prepared some extract of belladonna from a defecated juice, he found it after some weeks full of granulations. These were removed by dissolving the extract in distilled water and decanting. After washing and drying at 100° C., they proved to consist of a mixture of silicate and chloride of potassium equal in weight to 6.8 per cent of the original extract. It was then remembered that the belladonna plants used had been collected from a spot which had long been frequented by charcoal burners for their operations, and the remainder of the explanation was to be found in the decided taste of solanaceous plants for silica and potash.—*Pharm. Journ.*, No. 474.

A new Autographic Printing Process.—A good deal of attention being at present devoted to easy methods of printing, the following may find room here: HOWARD, of Baltimore, directs to transfer the writing, made with a special kind of ink, upon a copper-plate, which is then covered with a solution of a salt of mercury, and afterwards with metallic mercury. All those portions of the plate, which are not covered with writing thereby become amalgamized, and reject the printer's ink. Printing from the plate is done in the usual manner. This process is patented, so far as we have been informed.

A New Anæsthetic.—PROF. PAUL BERT has introduced a new anæsthetic mixture, for which total freedom from danger is claimed. It consists of a mixture of 85 parts of laughing gas, and 15 parts of oxygen, delivered under a pressure of 93 centimetres (36½ inch.) of mercury (the common atmospheric pressure being 75 centim. or 30 inch.). Each gas, in a pure state, is contained in a separate rubber bag, whence they are delivered, by means of proper adjustments, in the requisite proportions, into a third smaller bag, in which they mix, and from which the mixture is conducted to a sort of mask applied to the face of the patient. This mask is provided with two valves, one for admitting the gas during the act of inhalation, the other for giving exit to the products of exhalation. The consumption of gas is about 6 litres (about 1½ gall.) per minute. This is considerable, and a sufficient supply of each gas should therefore be at hand, before the operation begins. Reports speak very favorably of this new method.—*Le Monit. Thérap.*, Oct.

Hydrofluoric Acid in Diphtheria.—MR. HENRY BERGERON has obtained very favorable results from inhalations of an atmosphere containing a definite small proportion of hydrofluoric acid gas. The quantity employed is 1 gram for each cubic metre (1.3 cubic yards) of air space in the room during 3 hours. The gas is generated by allowing the proper amount of acid slowly to evaporate from a vessel (of lead) placed on a table a short distance from the bed of the patient.—*Le Monit. Thérap.*, Oct.

Hydrobromate of Cinchonidia.—One of the last papers of the late Prof. GUBLER, of Paris, gave a résumé of his experiments on the best form of employing the cinchona alkaloids hypodermically. He arrived at the conclusion that a 5-per-cent solution of the acid bromhydrate of cinchonidia, injected in the quantity of 1 cubic centimetre (ab. 16 minims), and therefore containing 0.20 gm. (or 3 grains) of the salt, is equal in effect to a dose of 1 to 2 grams of sulphate of quinia administered internally.—*Monit. de la Méd.*, No. 5.

The Sulphur and Paraffin Method of making Sulphuretted Hydrogen, which has been occasionally praised as a very convenient, clean, and rapid process, is not entirely free from danger. By melting together equal parts of paraffin and sulphur in a test tube, it is quite true that pure sulphuretted hydrogen gas is obtained in large quantities. But, according to Wm. Johnstone, the mixture often *explodes* with more or less violence, on an average once in seven times. Mr. J. Fletcher, however, thinks he has overcome this drawback, by the addition of broken tobacco-pipe shanks.*—From *Chem. News*, Nos. 1035, 1036.

Substitute for Linseed-oil and Turpentine in Painting.—A mixture is made of 100 parts of colophony resin, 2 parts of crystallized soda, and 50 parts of water. When thoroughly mixed, 24 parts of water of ammonia and 250 parts of water are added. The resulting artificial varnish has a syrupy consistence, dries rapidly, resists moisture and exposure to changes of weather, and may be varnished over, when dry, like ordinary oil-color.—*Neueste Erfind. und Erfahr.*

On the Purple of the Ancients.—According to E. SCHUNCK, this coloring matter is contained in a small whitish cell, near the head, under the shell of molluscs. Linen, saturated with it and exposed to the sunlight, passes from the original yellow through green and blue into purple and scarlet; at the same time it exhales an odor resembling that of asafœtida. This peculiar animal secretion remains undecomposed for years, if kept in the dark; but as soon as it is exposed to sunlight, the change of color makes its appearance quite rapidly, without any apparent influence upon it of the presence or absence of oxygen. Chlorine and nitric acid destroy the color, but soap and other acids are without effect upon it. By extracting 400 animals with alcohol, Schunk obtained, in the sunlight, 7 milligrams of purple. He named this coloring matter *punicin*, and believes it to belong to the indigo-group.—*Chem. News*, No. 39.

Myriogynic acid is the name given by BARON F. VON MUELLER to a substance separated by him from *Myriogyne minuta*, Less., and *M. Cunninghami* D. C. (*Zeit. Oest. Apoth.-Verein*, Nov. 1st).

It was obtained by treating a watery extract with alcohol, evaporating the solution, redissolving the residue in water containing a little ammonia, acidulating with hydrochloric acid, shaking with ether, and evaporating the ethereal solution. After washing with cold water, the new acid, which is compared to santonin by the discoverer, forms a brittle yellowish or brownish mass having a bitter taste. It is very slightly soluble in cold water, more soluble in boiling water, very soluble in alcohol, less so in ether, and readily soluble in alkaline solutions. Sulphuric acid forms with it a red-brown solution that is precipitated by water; strong nitric acid gives a yellow solution, and hydrochloric acid does not affect it. The plants also contain an essential oil. As both species exercise a stimulant action almost equal to arnica, Baron Müller suggests that they might possibly find a use in medicine as stimulants of the muscular and nervous systems. *M. minuta* is distributed almost throughout Australia and Southern Asia, and *M. Cunninghami* over the greater part of the Australian continent.—*Pharm. Journ.*, No. 440.

* It is not long since a tube full of this mixture, while being heated, flew to pieces in our hands. We have, however, noticed that, after the mixture is once well melted together, there appears to be no danger in reheating it. Nevertheless we want to caution our readers to be circumspect in the use of this method.—ED. N. R

PRESCRIPTIONS AND FORMULÆ.

We shall be obliged if our readers, who make use of these formulæ, will inform us of their experience with them, and note any errors or modifications worthy of attention.

Syrup of Lacto-phosphate of Lime.—Menières gives the following formula:

Lactate of sodium, pure	1
Phosphate of calcium, soluble	4
Simple syrup	395
Water	q. s.

Dissolve the salts in just sufficient distilled water, add the solution to the syrup in the cold, and flavor with a few drops of essence of lemon.

Colored Pencils.—L. Von Faber makes pencils for writing upon glass, porcelain, metal, etc., as follows:

Black: Ten parts of lampblack, forty parts of white lead, twenty parts of wax, ten parts of tallow.

White: Forty parts of white lead, twenty parts of wax, ten parts of tallow.

Dark-blue: Fifteen parts of Berlin blue, five parts of gum-arabic, ten parts of tallow.

Yellow: Ten parts of chrome yellow, twenty parts of wax, ten parts of tallow.—*Dingler's Journal.*

Fly-Bane.—A concentrated solution of alum applied to the window-sill is said to be an effective remedy against the entrance of flies. The latter are also said to avoid rooms which are coated with white-wash mixed with alum solution.—*Pharm. Zeit.*

Estragon Vinegar.—

Fresh tarragon leaves (*Artemisia Dracunculus*)	150 parts.
Lavender flowers	15 "
Lemon peel, outer part	15 "
Orange peel, outer part	30 "
Ceylon cinnamon	7.5 "
Cloves	4 "
Black pepper	12 "
Wine vinegar	1,000 "
Strongest vinegar ("sprit")	1,250 "

—*Pharm. Zeit.*

Cheap Logwood Ink.—(FEHR.) 35 parts of extract of logwood are boiled with 1,000 parts of diluted vinegar until dissolved. When the solution is cold, 20 parts of sulphate of iron are added, together with 10 parts of alum, 16 parts of gum-arabic, 32 parts of sugar and 2 parts of glycerin.

New Ink Absorber.—N. JACOBSEN, of Berlin, has obtained a patent on the following: Mix 7 parts of gypsum with 1 part of potato-flour (and a little water) to a homogeneous mass, and pour it into a suitable mould. When hard, the composition will absorb ink from ink-spots, etc., readily, and will last a long time.

Quinia and Iron Tonic.—

℞ Ferri et quiniæ citr.	grains 40
Acidi hydrobrom.	fl. ʒ 2
Spirit. limon.	fl. ʒ 1
Syrupi	fl. ʒ 6
Aquæ	q. s. ad fl. ℥ 6

Dose: ½ to 1 fl. ʒ.—*Pharm. Journ.*

Linimentum Potassii Iodidi.—

℞ Saponis albi	ʒ 12
Aquæ destillatæ	fl. ℥ 3½
Alcoholis	fl. ℥ 1
Potassii iodidi	ʒ 6
Adipis	℥ 1

Macerate the soap in 2 ℥ of the water; dissolve the iodide of potassium in the remainder of the water; then add the alcohol, and afterwards the lard, using a gentle heat. If desired, add some perfume.—*Pharm. Journ.*

NOVELTIES.

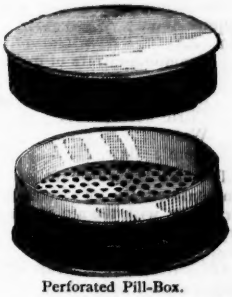
From the MOCHARA COFFEE COMPANY, of 60 Watling St., London, E. C., England, we have received a sample of a preparation of dried figs to be used as an addition to the flavor and color of coffee. It has long been the custom to use chicory root for this purpose, and this is intended to take its place. It is called **Mochara** or *Café de Santé*, and is used in the proportion of 1 part to 3 or 4 parts of coffee. For infants and invalids who require a hot drink, but for whom the stimulation of coffee is objectionable, it may be used in larger proportions. The retail price in England is about 25c. per lb. in tin cans.

We have before noticed the perfumes manufactured by W. A. Hoyt & Co., of Boston, Mass., and now call attention to several new additions to their line of goods of which we give illustrations. The **Vice-Regal Bouquet** shown in Fig. 1 is a handsome handkerchief perfume, put up in white glass bottles with "Stilligoutte" stoppers. **Hoyt's A No. 1** (Fig. 2), in ounce bottles, is another of the attractive low-priced line of goods for which this house is noted. The **Camphorated Saponaceous Dentifrice** and the **Vegetable Antiseptic Dentifrice** (Fig. 3) are especially recommended by the manufacturers for their good and desirable qualities, the latter varying from the former chiefly in having a flavor of checkerberry instead of camphor. Like the other articles manufactured by this house, these are of good quality, attractive appearance, and moderate price.

FIG. 1.

FIG. 2.

FIG. 3.


Perforated Pill-Box.

An adhesive preparation recently introduced, called **Te-nex-ine**, possesses the combined advantages of a glue, cement, and mucilage, and also serves to resist the action of oils and moisture. It is recommended as a means for repairing broken furniture, crockery, glassware, and ornaments; for affixing paper labels to glass and tin; for the manufacture of emery-wheels, artificial flowers, silk hats, and books, and for coating the inside of wooden or paper packages intended to hold oily, greasy, or wet substances. So far as we have been able to try the sample sent us, it answers all these indications. It is without odor, hardens with great rapidity, possesses remarkable adhesive properties, and is nicely put up in pyramidal bottles and provided with a neat cover, brush, and handle.

It is manufactured by the TENEXINE CO., 14 Oliver st., Boston.

The season has arrived when the sale of licorice becomes active, and we desire to call the attention both of retailers and consumers to the "**Ringed Licorice**" made by the company of that name, at 367 Atlantic avenue, Boston. Every one appreciates how troublesome it is to break off convenient pieces of the ordinary stick-licorice. In the form here referred to, the licorice has been moulded by heat into button-shaped pieces connected by a narrow portion at their centres. Each "button" can be bitten or broken off with ease as it is needed, and without the aid of a knife or hammer. A dozen rolls are packed in a neat muslin covered pasteboard box, and the sample sent to us contains also a few lemon-leaves which give a pleasant odor and add to the attractive appearance of the contents.

The **White Surface Tin-foil**, manufactured by Mr. J. J. Crooke, of this city, is one the most beautiful and attractive things of the kind we have yet seen. Its peculiarity consists in its milled or embossed surface, giving it the appearance of a finely woven cloth of minute silver threads. Any one who remembers the imitations, in silver, of doyleys and napkins, shown in the Russian Department of the Centennial Exhibition, will appreciate the general effect of these goods. Some of the samples received have been left plain, while others, previous to the embossing process, have had labels or checkered patterns printed on them in colors.

These foils ought to become very popular among pharmacists and others who wish their goods to be distinguished for tasteful appearance.

J. W. RANDOLPH & ENGLISH, Paper-box Manufacturers and Booksellers, of Richmond, Va., send us samples of their **Perforated Pill-Boxes**, and **Perforated Puff-Boxes**, which have, as their peculiar feature, a perforated false bottom, which allows the starch, or licorice-powder in the case of the former, to fall to the bottom of the box, and leave the pills uncovered. By reversing the box the pills are again imbedded in the powder. In the puff-box the diaphragm is made of fine gauze, and forms a support for the puff-ball, which is thus prevented from contact with the powder while it is damp, and thus "caking" of the powder by moisture, and "packing" from weight of the puff, is avoided. Seven sizes of the pill-boxes are made, ranging from $1.50 to $5.00 per gross.

A third box, manufactured by the same persons, is intended for **ointments**, or similar greasy substances, and consists of pasteboard, the inner side being coated with a substance impermeable by fats at a temperature below 150° Fahr. They range in capacity from ¼ to 4 oz., and in price from $2.50 to $5.00 per gross. An advantage which they possess over wood is their non-absorbent nature, while they are less bulky than metal and porcelain boxes of similar capacity.

Mineral Waters.—52,085 gallons of mineral waters were exported from Stettin, Germany, in 1878; 1,230 gallons went to Great Britain. In 1877, the total export was 48,655 gallons.—*Chem. and Drug.*

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.*]

No. 650.—**Commercial Jelly** (M. B. & Co.).

The basis of many commercial fruit jellies, at the present day, is plain apple-jelly, made by boiling down apples to a homogeneous jelly, and flavoring it to resemble the particular fruit desired. This is, of course, a trick of the manufacturers, and does not furnish as fine a product as may be obtained by other ways. Good jellies may be made from the best gelatin, or better still, from best isinglass, as follows: 7 oz. of isinglass, torn into shreds, well washed, and soaked in water, are gradually heated to boiling in one quart of water which had previously been mixed with a small quantity of white of egg. The liquid is kept at a slow boil, until all but a few shreds have been dissolved, and the liquid has been reduced to the volume of about 24 oz., when it is to be strained at once through a very clean wetted linen or cotton strainer. According to the nature of the fruits or other ingredients to be added, the process must be varied somewhat. Consult *A. Cnyrim*, Die Conservirung der Nahrungsmittel. 8vo, Weimar, 1879.

No. 651.—**Elixirs** (Ch. M.; J. K. W.).

The following formulæ may be used for the elixirs you inquire about:

1. *Elixir of Iron, Quinia, and Strychnia.*

Ammonio-citrate of iron	256 grains.
Sulphate of quinia	16 "
Strychnia (two and one-half grains)	2½ "
Citric acid	5 "
Water	½ fl. ʒ
Simple elixir, q.s. ad	16 fl. ʒ

Dissolve the sulphate of quinia, and afterwards the ammonio-citrate of iron in the water. Dissolve the strychnia, with the aid of the citric acid, in a small quantity of the simple elixir, by trituration in a mortar, and, finally, mix the whole thoroughly together.

Of course, plain syrup may be used in place of the simple elixir; only you would have to call it then simply a syrup.

A good formula for simple elixir will be found in our last number, p. 348.

2. *Elixir of Guarana.*

Fluid extract of guarana	4 fl. oz.
Simple elixir	12 fl. oz.

3. *Elixir Pectoral* (Pectoral Elixir).

This is one of the names of a mixture contained in the German Pharmacopœia, under the title "Elixir e Succo Liquiritiæ," commonly known as "Brust-Elixir." It is made thus:

Purified extract of licorice, *two parts* 2

Dissolve in

Fennel water, *six parts* 6

Then add of

Anisated spirit of ammonia, *two parts* 2

It forms a brown, cloudy liquid, which must be kept in well-closed vessels, and must be shaken up before being dispensed.

The *Anisated Spirit of Ammonia* is made by dissolving one part of oil of anise in 24 parts of alcohol, and adding 5 parts of water of ammonia.

No. 652.—**Aromatic Sulphuric Acid** (Alb. J.).

There have been several formulæ proposed for making this preparation rapidly without percolation. The last one, which has been sent to us by Mr. Wm. K. Mattern, of Philadelphia, is this:

Sulphuric acid	3 ʒ
Tincture of ginger	2 fl. ʒ
Oil of cinnamon	5 min.
Cudbear	20 grs.
Alcohol, sufficient to make	16 fl. ʒ

The cudbear is first macerated with some of the alcohol and the latter filtered.

No. 653.—**Boker's Bitters** (D. S. C.).

The formula is *said* to be the following:

Quassia, rasped	1½ oz.
Calamus, ground	1½ oz.
Catechu, powd.	1½ oz.
Cardamom, ground	1 oz.
Orange peel, dried and ground	2 oz.
Best whiskey	4 pints.
Water	2 gall.

Macerate the powder for ten days in the whiskey; then filter and add the water. Color with mallow or malva flowers, and, if required, filter again.

The other formula which you inquire for we will furnish in a succeeding number.

No. 654.—**Guaco** ("Student").

There are several drugs which bear this name. It is principally applied to the stem with leaves and flowers of *Mikania Guaco* H. et Bpd., nat. fam. Compositæ—Eupatorieæ, native of Mexico and Colombia. The stem is 2–4 millimetres (up to ⅛ inch) thick, reddish-brown, twisted and grooved, covered with a thin bark. The interior of the woody portion is filled with marrow, but in old stems is hollow. It is an aromatic bitter, and was highly lauded, at one time, in cholera and as a remedy for snake-bites.

Under the same name there has been sold in the market a drug, probably derived from another species of *Mikania* (perhaps *M. scandens* L., native of the U. S.), consisting only of stems 4–10 mm. thick, resembling in appearance and structure the former. Wigand states that some have referred the latter to *Aristolochia cymbifera* Mart. et Zucc., and to *Cissampelos Pareira* L.

We have seen only the first-named variety in the market here.

No. 655.—**Alstonia scholaris and Alstonia constricta** (Malaria, and A. W. W.).

You will find an answer to your query on page 354.

PHARMACEUTICAL CALENDAR.—December.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., not quoted in this Calendar will oblige us by forwarding a schedule of their meetings and a list of officers.

Date.	Society Meetings.
2d, Tues.	Philad. Coll. Pharm.—Trustees' Meet.
	Pittsburgh Coll. Ph.—Trustees' Meet.
4th, Thur.	Louisville Coll. Ph.—Monthly Meet.
	N. Y. Coll. Ph.—Trustees' Meet.
9th, Tues.	Chicago Coll. Pharm.—Trustees' Meet.
	St. Louis Coll. Phar.—Pharm. Meet.
10th, Wed.	Cincinnati Coll. Phar.—Phar. Meet.
11th, Thur.	Newark Pharm. Asso.—Monthly Meet.
	Louisville Coll. Ph.—Directors' Meet.
	Maryland Coll. Ph.—Stated Meet.
	Phila. Coll. Phar.—Alumni Meet.
	N. Y. Germ. Apoth. Soc.—Monthly Meet.
16th, Tues.	Phila. Coll. Phar.—Phar. Meet.
	Pittsburgh Coll. Phar.—Phar. Meet.
	Kings Co. Phar. Asso.—Stated Meet.
	St. Louis Coll. Phar.—Trustees' Meet.
18th, Thur.	N. Y. Coll. Phar.—Phar. Meet.
29th, Mon.	Phila. Coll. Phar.—Stated Meet.
	Pittsburgh Coll. Phar.—Stated Meet.

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